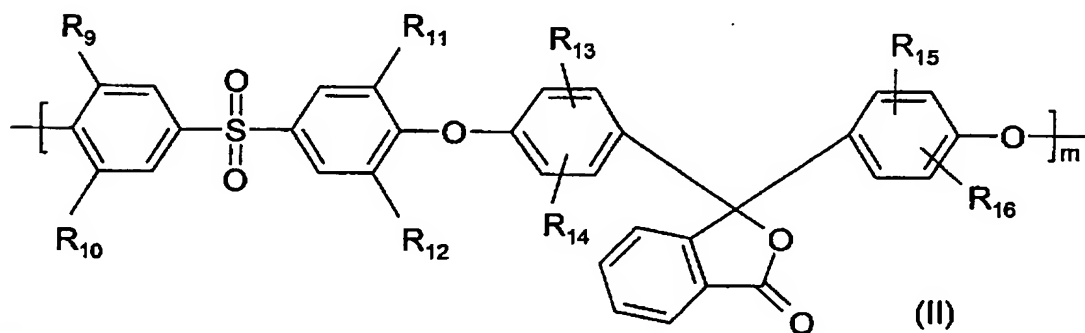
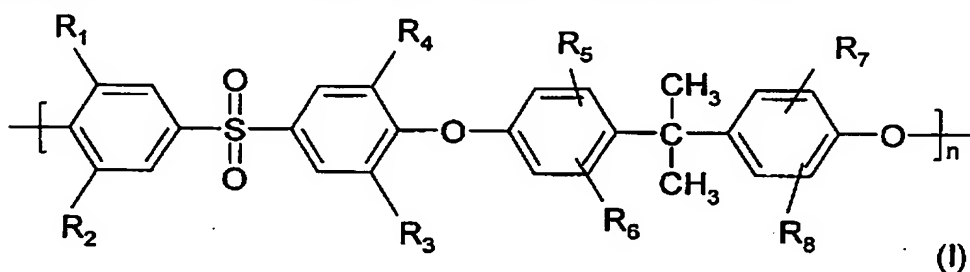


CLAIMS

1. Fuel cell comprising a membrane-electrode assembly including:

- (a) an anode;
- (b) a cathode; and
- (c) a polymer electrolyte membrane interposed between the anode and the cathode,

wherein said polymer electrolyte membrane comprises a sulfonated polysulfone polymer having the following repeating units:



wherein

R_1 - R_{16} are independently hydrogen, a SO_3H group, a methyl group, an ethyl group or an optionally branched (C_{3-6})alkyl group, with the proviso that at least one of R_1 - R_{16} is a SO_3H group;

$n+m$ ranges between 10 and 1,000 included;

n ranges between 0 and 999 included; and

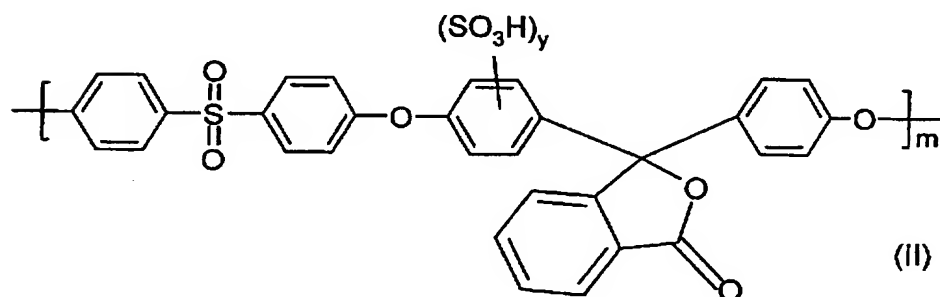
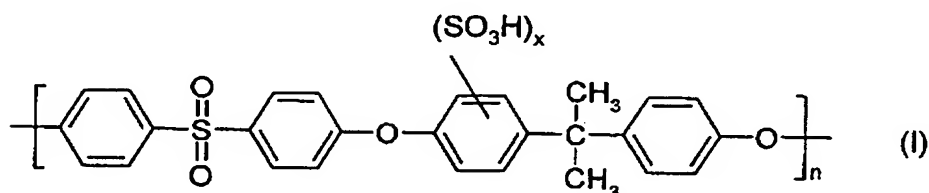
m ranges between 1 and 1,000 included,

and salts thereof.

2. Fuel cell according to claim 1 wherein at least one of R_{13} - R_{16} is a SO_3H group.

3. Fuel cell according to claim 1 wherein R_1 - R_4 and R_9 - R_{12} is hydrogen.

4. Fuel cell according to claim 2 wherein at least one of R_5 - R_8 and R_{13} - R_{16} is SO_3H .
5. Fuel cell according to claim 1 wherein said polymer electrolyte membrane comprises on a sulfonated polysulfone polymer having the following repeating units



wherein $x+y$ is 1 and $n=m$.

6. Fuel cell according to claim 1 wherein said polymer has a sulfonic content of about 0.5-3.5 meq/g.
7. Fuel cell according to claim 5 wherein said polymer has a sulfonic content of about 0.7-2.3 meq/g.
8. Fuel cell according to claim 6 wherein said polymer has a sulfonic content of about 0.8-1.3 meq/g.
9. Fuel cell according to claim 1 wherein the polymer is amorphous.
10. Fuel cell according to claim 1 wherein cathode and/or anode comprises a sulfonated polysulfone.
11. Fuel cell according to claim 10 wherein said a sulfonated polysulfone polymer is a polymer having the repeating units as from claim 1.
12. Fuel cell according to claim 1, which is a hydrogen fuel cell.
13. Membrane-electrode assembly including:
- (a) an anode;
 - (b) a cathode; and

(c) a polymer electrolyte membrane interposed between the anode and the cathode,

wherein said polymer electrolyte membrane comprises a sulfonated polysulfone polymer having the repeating units according to anyone of the preceding claims.

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14. An apparatus powered by a fuel cell according to anyone of claims 1 to 12.
15. Apparatus according to claim 14 selected from engine for vehicle transportation, power supply unit and electronic portable device.

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